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ABSTRACT

The Computer Assisted Basic Skills project was conducted during the 1991-92 academic year in the Grand Rapids Public Schools in Michigan to develop a model that would provide adult educators with a framework for developing and/or redesigning a computer-assisted instructional (CAI) program for basic skills instruction. Existing models and model components for designing and implementing basic skills CAI programs were identified and reviewed to determine their appropriateness to adult basic education. Five components (curriculum, software, hardware, procedures, and trained staff) were selected as the foundation of a model for implementing CAI curricula. The model components were field tested, refined, and organized into a package for use by adult educators. A training package was designed to assist users in implementing the model. Formative and summative evaluations established that the project staff were successful in producing a curriculum-driven model that is suitable for duplication and/or expansion to design inservice training in basic skills CAI for other adult education staff. (Appended are the model for implementing basic skills CAI and statements of the purpose and responsibilities of the community education computer planning committee.) (MN)

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353 SPECIAL DEMONSTRATION PROJECT

"MODEL FOR IMPLEMENTING TECHNOLOGY IN THE ABE CURRICULUM"

Grand Rapids Public Schools
Community Education
Adult Education Division

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

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FINAL REPORT

January, 1993

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FINAL REPORT

SECTION 353 PROJECT: A MODEL FOR IMPLEMENTING BASIC SKILLS COMPUTER ASSISTED INSTRUCTION

I. OBJECTIVES

The original project objectives, accomplishments and/or lack of accomplishments, and reasons for each are listed in the following Evaluation Plan Final Report (pp. 3, and 5-11), compiled by the G.R.P.S. Educational Research and Development Center.

II. TARGET POPULATION

The target population of this project is described in the Evaluation Plan Final Report, p. 2.

III. OPERATION OF PROGRAM

The plan of operation and changes or additions to the plan are reviewed in the Evaluation Plan Final Report under "Program Strengths", pp. 9-10.

IV. EVALUATION

This project was evaluated by the Educational Research and Development Center of the Grand Rapids Public Schools. Both formative and summative evaluation methods were utilized, and are addressed in the Evaluation Plan Final Report, under "Questions to be Addressed", pp. 3-4.

V. FINDINGS AND CONCLUSIONS

A total evaluation of the project, its accomplishments, benefits, disadvantages and project recommendations are included in the Evaluation Plan Final Report, pp. 5-12.

VI. RECOMMENDATIONS FOR DISSEMINATION

This project can be duplicated or expanded in other programs by reproducing any or all of the materials included in the CAI BASIC SKILLS Project Components Manual. In addition to the written documentation, the CAI BASIC SKILLS Manual includes tutorial diskettes (IBM version) and overhead transparencies which may be used to inservice/train other adult education staff on the CAI Basic Skills Model and components (curriculum, hardware, software, procedures and staff).

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In addition to the above materials, an extensive resource section (including evaluation forms, another 353 Project Software list, Basic Skills reports, etc.) is included in the Manual, and may be disseminated to other programs.

Plans for continuing this project include use of the model components, resources and diskettes, and overhead transparencies to train/inservice new adult educators, as well as to plan for additional hardware and software purchases. The guidelines, decision-making charts, and planning process developed via this project will continue to be used as our district aligns and implements an outcome-based core curriculum in basic skills.

VII. PRODUCTS

Five copies of the Basic Skills CAI Model and Documentation Manual are included with this report. Copies of the model, all materials, forms, resources, tutorial diskettes, overhead transparencies and other documents, developed as a result of this project, are included in the Manual.

VIII. BUDGET

A breakdown of the revised itemized budget and actual expenditures follows.

PROGRAM: COMPUTER ASSISTED BASIC SKILLS INSTRUCTION OF ADULTS

DATE: SEPTEMBER 1, 1991 TO SEPTEMBER 30, 1992

CNTROL OFFICER: JILL WISER

LOCATION: WAM

	PROPOSED BUDGET	ACTUAL EXPENDITURE
PROJECT COORDINATOR	10,799	10,799.00
CURRICULUM SPECIALIST	10,799	10,799.00
ABE TEACHER TEAM	2,700	3,899.08
SECRETARY SALARY	8,200	7,450.21
PRINTING	1,340	968.61
SUPPLIES & MATERIALS	500	496.03
MISCELLANEOUS	200	196.03
INDIRECT COST 3.02%	1,328	1,215.68
RESEARCH & DEVELOPMENT	3,000	3,000.00
FICA	4,409	4,428.12
BOE	1,625	1,647.36
WORKERS COMP	250	225.27
UNEMPLOYMENT	166	191.27
TOTAL EXPENSE	45,316	45,316.36

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Computer Assisted Basic Skills Project (CABS)
Final Evaluation Report
1991-92

Educational Research and Development Center
Grand Rapids Public Schools
Grand Rapids, Michigan

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Introduction

The Computer Assisted Basic Skills project (CABS) was implemented during the 1991-92 academic year by the Grand Rapids Public Schools through the Adult Education division of Community Education. The project resulted from a successful Section 353 Special Demonstration Project Grant application through the Michigan Department of Education's Adult Extended Learning Services, within the Adult and Community Education Division.

The project began in October, 1991 and ended on September 30, 1992. The Research and Development Center (R&D) designed and was responsible for the evaluation of this project.

The stated purpose of the project was "to provide adult educators with a framework for making the various decisions necessary when developing and/or redesigning a computer assisted instructional (CAI) program for basic skills instruction". The final product of the project was a manual to assist adult educators in a step-by-step process of making decisions relative to their CAI programs for teaching basic skills. The manual includes guidelines and criteria for educators to use at each step of the process. For persons developing a new program, the manual provides a curriculum-driven CAI model to follow and includes resources, training materials and tutorial diskettes. Those who are modifying an existing program can select those components (curriculum, hardware, software, staff, procedures and other resources) which are relevant for their purposes.

Goals and Objectives

The stated goal of the project was to provide adult educators with a step-by-step procedure to use in designing and implementing a computer aided program of basic skills instruction. Attainment of this goal depended on the successful completion of the following seven objectives:

1. To identify existing models and/or model components for designing and implementing computerized basic skills instructional programs.
2. To review the existing model and/or model components for their appropriateness to adult basic education.
3. To refine and/or develop model components.
4. To fieldtest the model components in existing and developing sites, to determine their effectiveness.
5. To refine the model components based on feedback from the fieldtest.
6. To organize the model components into a package for use by adult educators.
7. To design a training program to assist users in implementing the model.

Questions to be Addressed

This evaluation documents project activities and timelines and summarizes to what extent the seven objectives were accomplished and whether the overall goal of the project was achieved. Because the focus of the evaluation is primarily on documenting the accomplishment of project activities, and because project activities are primarily process-oriented, the evaluation design used is essentially formative. The ultimate outcome of the project is a

model. The accomplishment of this outcome is documented in the form of a manual, prepared in quantities and ready for dissemination through the State Department of Education.

To determine whether, and to what extent, project objectives were accomplished, each was restated as a question. Documentation was gathered throughout the year and is summarized in the report. Project strengths, areas of concern and recommendations are included. Following are the questions addressed in this evaluation.

1. Were existing models and/or model components for designing and implementing computerized basic skills instructional programs identified?
2. Were the existing models and/or model components reviewed for their appropriateness to adult basic education?
3. Were model components refined and/or developed?
4. Were the model components fieldtested in existing and developing sites to determine their effectiveness?
5. Were the model components refined based on feedback from the fieldtest?
6. Were the model components refined into a package for use by adult educators?
7. Was a training program designed to assist users in implementing the model?

The project evaluator met on a regular basis with project staff throughout the year to review the progress of the project and to document project activities. Following is a summary of the findings.

FINDINGS

1. Were existing models and/or model components for designing and implementing computerized basic skills instructional programs identified?

Project staff set out to identify existing computerized basic skills instructional programs by contacting individuals and organizations who might have expertise and/or experience with computer assisted instruction (CAI) models for adults. Following is a list of those individuals or organizations contacted.

Able Center, Free Mall, North Carolina
Adult Literacy Program, Queensborough Public Library, New York
Annabelle Lavier, Treaty Oak Community College, Oregon
California Literacy Campaign, Menlo Park Public Library, California
Christina M. Jagger, New Readers Press, New York
Conference on Adult Literacy and Computers, Virginia
Eastern Michigan University Academy, Michigan
EPIE Institute and Teachers College Press, New York
ERIC Research, Maryland
ICCE, University of Oregon, Oregon
Leap Learning Center, Richmond Public Library, California
Literacy Assistance Center, Inc., New York
Literacy Training Network, College of St. Thomas, Minnesota
Literacy Volunteers of America, New York
Mary Holder/Carmen Johnson, Cincinnati Public Schools, Ohio
Merrimack Education Center, Massachusetts
New Jersey Adult Education, Dissemination Project, New Jersey
Oakhill Correctional Institute Library, Wisconsin
Ruth Hollenbeck, Moberly Area Junior College, Missouri
Technology for Literacy Center, Minnesota
York County Literacy Association, South Carolina

2. Were the existing models and/or model components reviewed for their appropriateness to adult basic education?

Project staff reviewed the materials sent in by those contacted and determined that none constituted a model or component. Most of the sources were only able to provide listings of adult CAI software and, in some cases, reviews of software.

3. Were model components refined and/or developed?

Since no existing model was available to modify or refine, project staff set about developing a model. A city-wide committee consisting of Grand Rapids Public Schools Adult Education teachers and directors was formed in September, 1991 to assist in this task. The formal charge for this committee can be found in the appendix. Representatives from the following programs/centers were involved.

Adult and Community Education Instructional Services
Adult Special Programs
Business and Industry Program
Burton Area Community Education
Career Development Center
Coit/CCRC Community Education
COPE Program
Creston Community Education
Harrison Park Community Education
Hispanic Center
International English Center
Lexington Community Education
Mid City Center
Ottawa Community Education
Retiree's Program
G.R. Tech Center
The Veteran's Facility
Zeeland Community Education

4. Were the model components fieldtested in existing and developing sites to determine their effectiveness?

Project staff established curricular subcommittees in November, 1991 to assist in testing and refining the model. These subcommittees were responsible for acting as field test coordinators and advisors for specific content areas. Following is a list of the community education programs/centers which were represented in each of the established subcommittees.

Computer Applications

Adult and Community Education Instructional Services
Business and Industry Program
Burton Area Community Education
Career Development Center
G.R. Tech Center
Lexington Community Education
Zeeland Community Education

Adult Basic Education

Adult and Community Education Instructional Services
Adult Special Programs
Harrison Park Community Education
Mid City Center

English as a Second Language

Hispanic Center
International English Center
Zeeland Community Education

General Educational Development Test

Burton Area Community Education
Coit/CCRC Community Education
COPE Program
G.R. Tech Center
Mid City Center
Retiree's Program
Veteran's Facility
Zeeland Community Education

5. Were the model components refined based on feedback from the fieldtest?

The subcommittees worked with the new model to design and prioritize curriculum outcomes, identify, evaluate and recommend software, determine and recommend appropriate hardware with which to operate the software and identify staff training needs. The subcommittees reported their findings to the City-Wide Computer Committee in May, 1992. Following this meeting, model components were refined as needed. A graphical organization of the model is located in the appendix.

6. Were the model components refined into a package for use by adult educators?

The manual has been completed and serves as documentation that this objective was accomplished. It consists of the following sections and materials:

Introduction
CAI Systems Development
Curriculum Considerations
Software Considerations
Hardware Considerations
Procedures
People
CAI Systems Development Tutorial Disk and Instructions for Use
Sample Training Materials
Resources

7. Was a training program designed to assist users in implementing the model?

Project staff developed a computer-based tutorial program to guide users through the CAI systems development process. This tutorial, included on computer diskette with each manual, can be used in conjunction with the overhead transparencies and the manual for staff training purposes, technical assistance and inservice or workshop presentations.

Program Strengths

Following is a list of strengths for the CABS project, based on the evaluator's observations and input from project staff.

1. Project staff were successful in producing a curriculum-driven model which includes information on CAI systems development, curriculum, software and hardware, procedures and personnel requirements. It also includes information on professional resources, sample training materials (overhead transparencies) and tutorial diskettes which explain the model.

2. The use of subcommittees was beneficial for all who were involved by raising their awareness of the curricular needs of adult basic education students, especially for reading software.

3. The process used by project staff to develop this model can also be used to develop models for English as a Second Language (ESL), high school completion or to develop models for uses of educational technology other than computers.

4. This project offered staff the opportunity to personally review, in the field, integrated learning systems and other packages they would not have been aware of otherwise.

5. Staff were able to incorporate into the model a software bibliography, the final product of a similar project recently completed by Mott Adult High School, Flint Community Schools.

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6. Although this grant did not include resources for a video training program, as originally proposed, staff were able to construct and include a training package using a computer tutorial and overhead transparencies.

Areas of Concern

Following is a list of concerns for the project, based on the evaluator's observations and input from project staff.

1. Project staff used a subcommittee structure to develop the model. Although this was a highly successful method, there was a large turnover of staff in the district between the 1991-92 and 1992-93 school years, which may cause potential delays in the project's implementation within the Adult Education and Community Education units of the Grand Rapids Public Schools.

2. Project staff found, during the course of the year, that there is currently very little English as a Second Language (ESL) software suitable for adult learners.

3. Project staff believe that many teachers of adult basic education do not currently have an effective means of identifying and reviewing software suitable to meet their particular curricular needs, and very often rely on catalog listings to make their selections.

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4. Project staff have determined that, even with this model, the process of identifying, acquiring, preparing, planning and implementing a computerized adult basic education program is very time consuming.

5. Staff are concerned that lack of funding can be a constraint for the implementation of this model.

RECOMMENDATIONS

The following recommendations are offered to address the concerns listed above.

1. Project staff propose that, because of high staff turnover in the Grand Rapids Community Education division, the first subcommittee session of the implementation year should be used to review and orient new committee members to the model. Other districts facing staff turnover between school years should also be aware of this issue.

2. Project staff recommend that, if adult ESL software is needed, teachers themselves may want to develop it (using Linkway Live! for example), since there is currently very little software of this type suitable for adult students.

3. Project staff recommend that teachers use the curricular piece of the model to determine priorities of instructional need and

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software review procedures, rather than basing their software acquisitions on a catalog listing.

4. Project staff point out that teachers should be aware of the potential time consuming nature of the process used in the model and should concentrate on implementing the model on an incremental basis. This will ensure a more satisfactory outcome for teachers and learners.

5. Because of financial constraints affecting many adult education programs, staff recommend a staged implementation plan, phased in over an extended period of time so that existing funding can be used most effectively.

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Appendix

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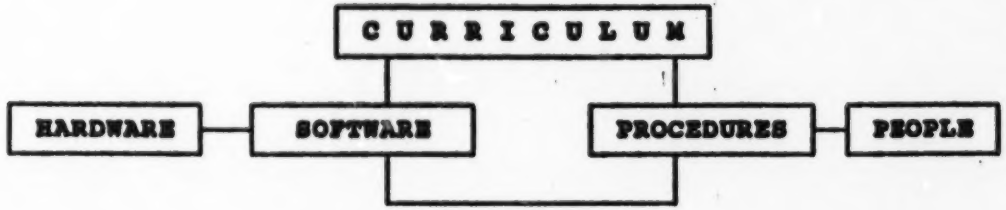
MODEL

FOR IMPLEMENTING BASIC SKILLS COMPUTER ASSISTED INSTRUCTION

FIVE COMPONENTS OF A COMPUTER AIDED INSTRUCTION SYSTEM



CURRICULUM - All system design decisions must be based on the curriculum. "What do we want to teach?"

SOFTWARE - Based on the goals and objectives, appropriate software must be found.

HARDWARE - Based on the software, appropriate hardware must be selected.

PROCEDURES - Written procedures must be developed which will deal with both system operation and implementing the curriculum.

PEOPLE - Staff must be trained and made comfortable with operating the system and implementing the curriculum.

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PURPOSE AND RESPONSIBILITIES OF THE COMMUNITY EDUCATION COMPUTER PLANNING COMMITTEE

PURPOSE

The purpose of forming the Computer Planning Committee is to insure that decisions that are made regarding the purchase and use of hardware and software in the instructional programs of Community Education are made in relation to a planned direction for the future.

RESPONSIBILITIES

The responsibilities of the committee are:

1. Establish goals for the use of computers in the instructional programs of Community Education.

2. Establish criteria to be used in the selection of instructional hardware and software.

3. Establish subcommittees, to include teachers from the areas, to make recommendations for instructional software. Subcommittees should be established in the following areas:

   Computer Education and Training
   Computer Assisted Instruction ABE
   Computer Assisted Instruction ESL
   Computer Assisted Instruction HSC/GED

"IT IS TRUE, ALL OF US ARE STANDING IN THE MUD, BUT SOME OF US ARE LOOKING AT THE STARS."
Oscar Wilde

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